

**Cooperative  
Ecosystem  
Studies Units**



**Report to Congress  
2000**

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#### **Introduction**

Management and stewardship of the nation's public lands and waters requires skillful public service supported by sound science and responsive technical assistance. Complex issues that transcend boundaries make it essential for agencies to work together. Universities have an important role in providing information for science-based decision-making. Hence, as part of the 1998 National Parks Omnibus Act, Congress authorized and directed the Secretary of the Interior "...to enter into cooperative agreements with colleges and universities, including but not limited to land grant schools, in partnership with other Federal and State agencies, to establish cooperative study units to conduct multidisciplinary research and develop integrated information products..."

This progress report describes: 1) the concept used in building these important partnerships, 2) current progress, and 3) future activities related to these cooperative study units.

#### **The Cooperative Ecosystem Studies Unit Concept**

A network of cooperative study units is being established to provide research, technical assistance, and education to agency managers and resource professionals. These units are named Cooperative Ecosystem Studies Units (CESUs), to signify their broad role as providers of research, technical assistance, and education to federal land management, environmental and research agencies, and their potential partners. *Cooperative* emphasizes that multiple federal agencies and universities are among the partners in this program. *Ecosystem* studies involve the biological, physical, social, and cultural sciences needed to address complex resource issues. Resources encompass natural and cultural resources.

Each CESU is structured as a working collaboration among federal agencies and universities. CESUs are based at universities and focused on a biogeographic region of the country. Universities provide space, basic administrative support (secretarial, accounting, equipment), and access to university faculty, students, staff, and resources.

Federal agencies contribute research scientists and/or other professionals located and working at CESUs under formal five-year agreements between their respective bureaus and the universities. Federal personnel are supervised and supported by their respective agencies, through existing administrative systems. Participating agencies provide scientific staff, administrative support funds, and project funds for specific research projects and technical assistance. Federal agency participation in a CESU does not alter previous arrangements or cooperative agreements.

Each CESU is comprised of the following key elements:

*1. Multiple federal agencies*

Federal agencies participate in CESUs within the scope of their respective missions. Federal agencies are substantially involved in CESU activities, working closely with host universities and/or partner institutions. With multiple federal agencies working together with university faculty, the potential for cost sharing, improved efficiency, and cooperative activities is significantly increased. Collaborative projects among agencies are encouraged and facilitated through the CESU agreements.

*2. Host university*

A key element of each CESU is the host university. The host university provides space and basic administrative support as part of its responsibilities within the CESU agreement. At least one federal research scientist and/or other professional is located at the host university. Federal agencies can add personnel where appropriate to their mission, needs, and available resources.

The resident CESU staff is augmented by host university faculty, graduate students, and postdoctoral fellows. The host university will offer educational opportunities for federal resource/environmental managers to improve or renew their skills through continuing education, short

courses, workshops, degree programs, distance learning, and other activities.

### *3. Partner institutions*

CESUs include partnership arrangements with universities, state agencies, tribes, and other organizations to increase CESU research, technical assistance, and education capabilities. Additional universities with special expertise or facilities participate in CESUs as partners to the host university described above. Partner universities significantly expand the capability and skills of a CESU. A partner university may provide unique facilities, expertise, or access to research materials.

Partner institutions are linked to the CESU through agreements that address overhead, cost-sharing, and other initial elements of cooperative ventures. This allows projects with partner institutions to be efficiently conducted. Partnership arrangements make the faculty, graduate students, and facilities of more universities available to participating federal agencies, reduce administrative costs, and minimize overhead charges.

### *4. Role and mission statement*

Each CESU prepares a role and mission statement that identifies research, technical assistance, education, and other services that it is especially qualified to provide. The role and mission statement includes the biogeographic area of concentration (such as the Colorado Plateau or the Southern Appalachian Mountains), a focus on particular ecosystem types (such as high deserts or urban areas), an emphasis on particular management regimes (such as wilderness and/or multiple use), or a combination of these themes.

### *5. Managers committee*

The attention of a CESU toward particular research projects or technical assistance/education activities is driven by its role and mission statement and the participating federal agencies' needs for scientific information, technical assistance, and education. CESUs include a mechanism for managers of the participating agencies to provide advice and guidance on science priorities and CESU activities, while maintaining the independence and objectivity of research projects. Each CESU has a managers committee composed of field managers and additional repre-

sentatives from participating federal agencies. The committee will provide advice and guidance to the CESU, review strategic and annual work plans, and assist in evaluating CESU performance.

#### *6. Strategic and annual work plans*

Science planning leads to improved research, more usable knowledge for resource/environmental managers, and reduced costs. Working together, CESU partners at an individual CESU will develop multi-year strategic plans so that participating agencies can effectively allocate resources to meet both immediate and long-term needs.

In addition, each CESU prepares a brief annual work plan for its research and service activities. The plan describes the CESU's ongoing research, anticipated projects, and products. The plans will be used to ensure the timely delivery of useful research to managers, coordinate research activities, meet GPRA requirements, and evaluate CESU performance.

While these key elements are central to each CESU, there is significant flexibility as to how they are to be implemented for each unit. CESUs can build upon existing organizations and arrangements, adapt key elements to local and regional conditions and needs, and innovate in the delivery of science.

### **The CESU Network**

The individual CESUs are organized into a CESU Network. The objectives of the CESU Network are to:

- provide agency managers and resource professionals with a broad range of high-quality scientific research, technical assistance, and education,
- deliver research, technical assistance and education that is timely, relevant and necessary to develop and implement sound adaptive management approaches,
- maintain the independence, objectivity and credibility of research;
- create and maintain effective partnerships to share resources and expertise,
- take full advantage of university resources while fully benefiting the universities, their faculty, and students,

- encourage professional development opportunities for all participants in the CESU Network,
- enhance collaboration among federal agencies to address shared and complex issues through efficient use of federal science resources,
- diversify federal partners' science-related professional and technical workforce,
- collectively identify and address emerging science issues, ideas and strategies at appropriate scales,
- promote interdisciplinary research, technical assistance and education, and
- facilitate sharing of capabilities and resources across the CESU Network.

There are several benefits of the CESU network:

*1. A broadened scope of scientific services for federal agencies*

The CESU Network delivers a broad scope of scientific research, technical assistance, and education to participating federal agencies. A CESU expands the staff of a national park superintendent, forest supervisor, public lands manager, or environmental administrator to include the entire complement of faculty, students, and others involved in a CESU and the CESU Network. Research is conducted at several scales appropriate to the participating agencies. CESUs can engage the full range of disciplines used by natural and cultural resource managers, from archeology to zoology. The biological, physical, social, and cultural sciences can be integrated to provide interdisciplinary problem-solving skills. Interagency cooperation is increased. Collaboration across federal departments and agencies is facilitated. With federal and university scientists working together within a university environment, the generation, synthesis, and use of scientific information is enhanced.

*2. Increased technical assistance to resource managers*

Resource managers of participating agencies have a local CESU to draw on for basic technical assistance, education and training, planning support, and other needed services. They have expanded, efficient, timely,

and cost-effective access to universities (either a CESU host or partner institution). In addition, the CESU Network provides managers with specialized skills and assistance available from other CESUs across the country. Sharing of CESU expertise to meet managers' needs is encouraged through the CESU agreements, an active electronic network of communication, and a CESU Council.

### *3. Additional scientific resources and opportunities for universities*

Universities that become hosts or partners in a CESU benefit in several specific ways. The faculty are augmented by federal scientists, as appropriate to agency mission, that can facilitate, direct, or cooperate on research projects, serve on graduate student committees and as faculty advisors, contribute to scholarly activities, and teach in their areas of expertise. University faculty benefit by close professional collaboration with federal employees and increased opportunities for interdisciplinary, multi-agency research projects related to federal resource management issues.

Graduate students benefit from increased research, fieldwork, and employment opportunities; exposure to contemporary federal resource management issues; and additional faculty, courses, and seminars. University research programs benefit from consistent and comprehensive agreements that provide for overhead costs, maximize opportunities for research, create a broadened scope of contacts with federal agencies, and offer a voice in establishing research agendas. Universities benefit from the overall CESU Network, as it makes their unique skills and expertise easily accessible by resource managers throughout the country.

### *4. Increased diversity of research scientists and institutions*

The science capability of federal agencies must be improved, and the cadre of federal scientists needs to diversify. CESUs include Historically Black Colleges and Universities (HBCU), Predominantly Hispanic Serving Institutions (PHSI), and Native American Tribal Colleges (NATC) as partners. Students at these institutions will be exposed to federal resource management issues and have increased access to research, fieldwork, and employment opportunities. The diversity of scientists and institutions involved in the CESU Network will strengthen the federal

government's ability to conduct creative, innovative and significant science critical to federal resource management.

The CESU Council coordinates the Cooperative Ecosystem Studies Unit Network. The Council includes representatives of participating Federal agencies operating under a Memorandum of Understanding (MOU) for the CESU Network. The Council develops and serves as a forum for coordination and implementation of the CESU Network. In doing so, the Council:

- prepares guidelines for agencies, universities, and other partners to participate in the CESU Network,
- assists individual CESUs in developing agreements and subsequent modifications,
- maintains networks for communication and data-sharing among CESUs,
- develops additional funding sources for the CESU Network,
- develops and implements a comprehensive strategic plan for the growth and development of the CESU Network,
- selects additional biogeographic areas, conducts necessary CESU selection competitions, and selects host universities,
- produces an annual report summarizing CESU Network activities,
- encourages its members to take appropriate actions for the CESU Network within the limits of their respective authorities, policies, and budget, and
- evaluates the CESU Network on a regular basis to determine how effectively objectives are being met.

### **Partnership Agencies**

The CESU Network is being established in a series of steps. In FY99, an interagency working group engaged in initial planning and development activities. Participating federal agencies currently include the:

- Bureau of Land Management (BLM),
- Department of Energy (DOE),
- National Park Service (NPS),



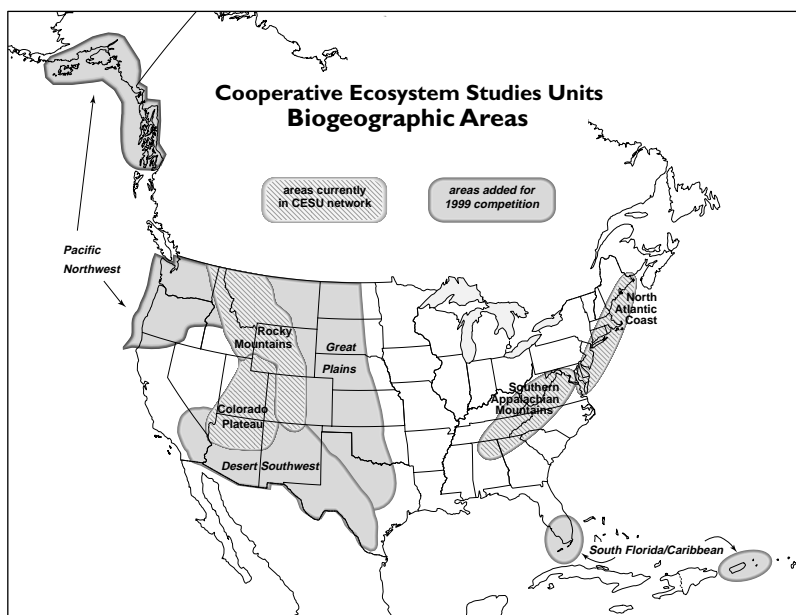
- U.S. Bureau of Reclamation (USBR),
- U.S. Forest Service (USFS), and
- U.S. Geological Survey (USGS).

Each of these federal agencies has formalized its cooperative efforts in developing and participating in the CESU Network via a Memorandum of Understanding.

### First Round CESUs

The first four CESUs were selected following a broad and formal competition among interested universities. CESUs were established in the following biogeographic areas:

- the Colorado Plateau,
- the Rocky Mountains,
- the Southern Appalachian Mountains, and
- the North Atlantic Coast.



Over 20 universities in 13 states are parties in this first round of CESUs. A second round of CESUs, focused on additional biogeographic regions of the country, will be established through competition in FY00 (see map).

#### Colorado Plateau CESU

Hosted by Northern Arizona University, the Colorado Plateau CESU has made significant progress in the last six months. The first managers committee meeting was held in conjunction with the 6th Biennial Conference on the Colorado Plateau, a research conference sponsored by the USGS Biological Resources Division and the National Park Service. Managers and scientists reviewed a draft annual work plan for the CESU and began work on a strategic plan. Northern Arizona University has provided some staff and both the NPS and USGS have personnel stationed at the CESU. To date, five federal agencies have funded projects with the Colorado Plateau CESU. A preliminary product includes a web-based resource management training program for NPS employees. Congress earmarked additional funds for ecological restoration activities through the CESU during FY00.

##### *Federal Partners:*

Bureau of Land Management  
U.S. Bureau of Reclamation  
U.S. Geological Survey  
National Park Service  
U.S. Forest Service

##### *Partner institutions:*

Arizona State University  
Utah State University  
University of Nevada – Reno  
Colorado State University  
Haskell Indian Nations University  
Diné College  
Museum of Northern Arizona  
The Arboretum at Flagstaff  
The Colorado Plateau Forum  
Navajo Nation Archeology Department  
Oregon State University

#### Rocky Mountains CESU

Hosted by University of Montana, the Rocky Mountains CESU is well underway. The NPS has duty stationed one employee at the CESU and three other federal agencies have designated liaisons with the CESU.

Four federal agencies have funded projects with the Rocky Mountain CESU. Example projects include a study of hazardous substances at Grant-Kohrs National Historic Site and a large study of historic fire regimes funded by the National Interagency Fire Center.

*Federal Partners:*

Bureau of Land Management  
U.S. Bureau of Reclamation  
U.S. Geological Survey  
National Park Service  
U.S. Forest Service

*Partner institutions:*

Montana State University  
Salish Kootenai College  
University of Idaho  
Utah State University  
Washington State University

Southern Appalachian Mountains CESU

Hosted by University of Tennessee, the Southern Appalachian Mountains CESU has made significant progress. The USFS has relocated one employee to the CESU. The NPS is hiring a new employee to be stationed at University of Tennessee and is considering another at Florida A&M University. The USGS-BRD has reassigned one employee to work on CESU projects. The Southern Appalachian CESU has completed its five-year strategic plan.

*Federal Partners:*

U.S. Geological Survey  
National Park Service  
U.S. Forest Service  
Department of Energy

*Partner institutions:*

Appalachian State University  
Western Carolina University  
Florida A&M University  
Oak Ridge National Laboratory  
Foothills Land Conservancy  
Joint Institute for Energy and the Environment  
Great Smoky Mountains Conservation Association  
National Council of the Paper Industry for Air and Stream Improvement  
Southern Appalachian Man and Biosphere

North Atlantic Coast CESU

Hosted by University of Rhode Island, the North Atlantic Coast CESU has provided some staff and the USGS Biological Resources Division has

reassigned one employee to work on CESU projects. Two federal agencies have funded projects with the North Atlantic Coast CESU. Example projects include field training of undergraduate and graduate students in resource protection for NPS coastal parks, and a study of nutrient enrichment in shallow coastal ecosystems on Department of Interior lands.

*Federal Partners:*

U.S. Geological Survey  
National Park Service

*Partner institutions:*

University of Maryland – Eastern Shore



### **First CESU Annual Meeting**

A first meeting of the CESU Network was held June 22-23, 1999 in Washington, DC. It provided a forum for universities and federal agencies to discuss approaches to developing CESUs and the CESU Network. At the meeting, the MOU was signed by each of the participating agencies. University and agency personnel worked together in technical sessions. The competition for a second round of CESUs was announced. Other agencies interested in participating, such as National Oceanic and Atmospheric Administration, the Environmental Protection Agency, and the Department of Defense, learned more about the CESU network. This meeting set in motion many initiatives that will support the CESU network.



Representatives from the University of Rhode Island, Northern Arizona University, University of Tennessee and the University of Montana with Secretary of the Interior Bruce Babbitt at the CESU Network meeting.

### **[www.cesu.org/cesu](http://www.cesu.org/cesu)**

A CESU Network website has been established at <[www.cesu.org/cesu](http://www.cesu.org/cesu)>. It provides additional information for those interested in the CESU Network and serves as a resource for university and agency members. The website provides access to a wide variety of information about CESUs, including a general introduction to the CESU concept; maps of the current and planned CESUs, agreements, strategic plans, reports and activities of current CESUs, schedules for meetings and other activities of the Council, a directory of CESU representatives, an administrative guide, and materials for current competitions. The website is a useful and cost-effective administrative tool for the CESU Network.

### **Future Activities**

A second round of CESUs is currently under development. The new biogeographic areas for which proposals are being reviewed are (see map, page 8):

- South/Florida Caribbean,
- Great Plains,
- Desert Southwest, and
- Pacific Northwest.

A competition was held, with proposals received from interested universities. Formal selection of host universities will be made by 15 May 2000. It is anticipated the additional CESUs will be established June 2000.

Several additional activities are planned. A strategic plan for the CESU Network will be completed in FY00. A competition for a third round of CESUs, covering additional biogeographic areas, will be conducted. Additional agencies are being invited and encouraged to participate in the CESU Network. Finally, participating agencies are being encouraged to utilize the CESU Network as appropriate for research, technical assistance and education to accomplish their missions. The CESU Network will undergo an external review after five years.

### **Conclusion**

Currently, management of the nation's lands and waters requires skillful public service supported by sound science. The challenges of the 21st century, and the environmental choices they will shape for the American people, demand even more skill and science. Universities play a critical role in providing information for science-based decision-making. CESUs are an important innovation in how federal agencies can work together with the nation's universities. CESUs are an efficient and cost-effective mechanism for delivery of scientific information to federal resource managers. CESUs, and the network of science partnerships that they are creating, are critically important. Both will serve the federal government, its partners, and the public in responding to the new century's demands.

For additional information, please contact:

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